IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

LUCIO DEVELOPMENT LLC,	§	
	§	
Plaintiff,	§	Case No: 1:17-cv-1152
	§	
vs.	§	PATENT CASE
	§	
	§	
INFINEON TECHNOLOGIES AMERICAS CORPORATION,	§	
	§	
	§	
Defendant.	§	
	§	

COMPLAINT

Plaintiff Lucio Development LLC ("Plaintiff" or "Lucio") files this Complaint against Infineon Technologies Americas Corporation ("Defendant" or "Infineon") for infringement of United States Patent No. 7,069,546 (hereinafter "the '546 Patent").

PARTIES AND JURISDICTION

1. This is an action for patent infringement under Title 35 of the United States Code. Plaintiff is seeking injunctive relief as well as damages.

2. Jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 (Federal Question) and 1338(a) (Patents) because this is a civil action for patent infringement arising under the United States patent statutes.

3. Plaintiff is a Texas limited liability company with its office address at 555 Republic Dr., Suite 200, Plano, Texas 75074.

4. On information and belief, Defendant Infineon Technologies Americas Corporation is a Delaware corporation having a principal place of business at 101 N.

Sepulveda Blvd., El Segundo, CA 90245. Its registered agent in the State of Texas is Corporation Service Company dba CSC – Lawyers Incorporation, 211 E. 7th Street, Suite 620, Austin, TX 78701.

5. This Court has personal jurisdiction over Defendant because Defendant has committed, and continues to commit, acts of infringement in this District, has conducted business in this District, and/or has engaged in continuous and systematic activities in this District.

6. On information and belief, Defendant's instrumentalities that are alleged herein to infringe were and continue to be used, imported, offered for sale, and/or sold in this District.

VENUE

7. Venue is proper in this District pursuant to 28 U.S.C. §1400(b) because acts of infringement are occurring in this District and Defendant has a regular and established place of business in this District. For instance, on information and belief, Defendant has a regular and established place of business at 3409 Executive Center Drive, Suite 209, Austin, TX 78731.

COUNT I
(INFRINGEMENT OF UNITED STATES PATENT NO. 7,069,546)

8. Plaintiff incorporates paragraphs 1 through 7 herein by reference.

9. This cause of action arises under the patent laws of the United States and, in particular, under 35 U.S.C. §§ 271, *et seq*.

10. Plaintiff is the owner by assignment of the '546 Patent with sole rights to enforce the '546 Patent and sue infringers.

11. A copy of the '546 Patent, titled "Generic Framework for Embedded Software Development," is attached hereto as Exhibit A.

12. The '546 Patent is valid, enforceable, and was duly issued in full compliance

with Title 35 of the United States Code.

13. On information and belief, Defendant has infringed and continues to infringe one or more claims, including at least Claim 1, of the '546 Patent by making, using, importing, selling, and/or offering for sale a software platform for embedded software development, which is covered by at least Claim 1 of the '546 Patent. Defendant has infringed and continues to infringe the '546 Patent directly in violation of 35 U.S.C. § 271.

14. Defendant, sells, offers to sell, and/or uses embedded software development packages including, without limitation, the DAVE software development kit, and any similar products ("Product"), which infringe at least Claim 1 of the '546 Patent.

15. The Product is a framework (e.g., a software development kit) that is configured to create embedded software for multiple hardware modules. For example, the Product is a programmable software development kit (SDK) for multiple hardware such as XMC1xxx and XMC4xxx microcontrollers based on ARM Cortex-M processors. Defendant and/or its customers specifically use DAVE to develop code, compile and debug on the target devices. Certain elements of this limitation are illustrated in the screenshots below and in the screenshots referenced in connection with other elements herein.

DAVE™ Software Development Kit overview

The DAVE™ SDK project provides the tool used to develop DAVE™ 4 software components or applications called "DAVE™ APPs". It provides facilities to create user interface configurations, edit template files, create a signal designer view and create documentation for the APPs. In this help contents are described the procedures/steps to develop DAVE™ 4 applications.

The audience for this help contents are:

- Experienced professionals with DAVE™ 4
- Professionals who want to develop DAVE™ 4 applications using the available application libraries

Prerequisites:

- Working knowledge of DAVE™ 4 Code Engine (DAVE™ CE) and its associated features
- Usage of XMC microcontrollers and knowledge of the hardware capabilities (available in the reference manual)
- Basic programming skills
- Basic object oriented programming skills (OOPS)
- Basic JAVA/Groovy programming skills

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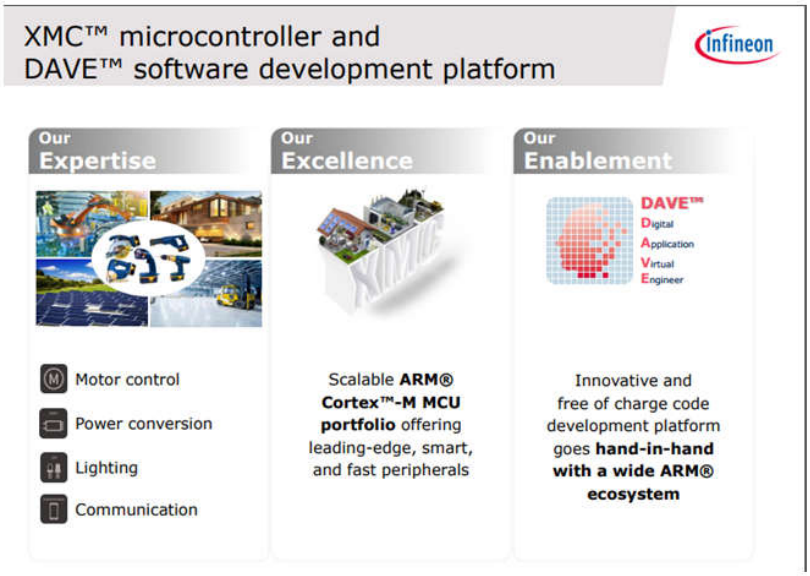

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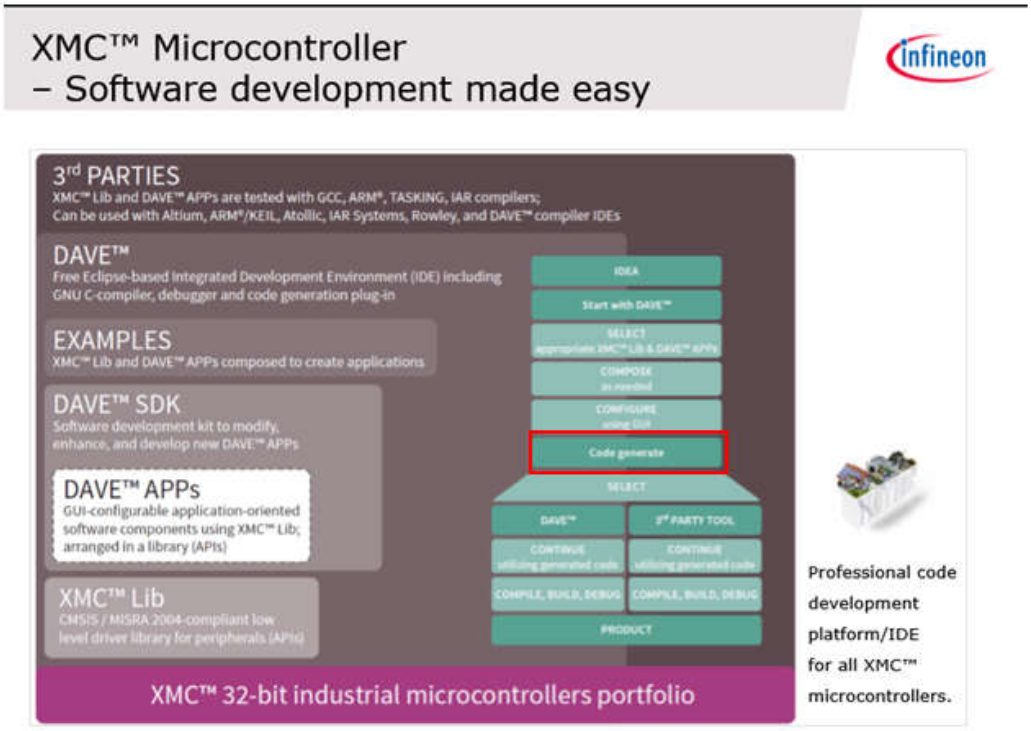

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Using DAVE™ 3 for eCBP

Instead of devoting a lot of time and space explaining the theory behind eCBP, it is much easier to look at an example of how DAVE™ 3 handles Components that require hardware resources. In DAVE™ 3, Components are called DAVE™ Apps.

Figure 4 shows a simple project that uses DAVE™ Apps to take incoming data from a UART interface and display the data on an OLED display that is connected to the MCU via a SPI interface.

When starting a new DAVE™ 3 CE project, a list of the installed DAVE™ Apps appears in the "App Selection View" window on the right (see Figure 4). The DAVE™ Apps are downloaded from the Infineon website and can be used for simple things like generating a single channel of PWM, or complex systems like a web server. Double clicking on any of the DAVE™ Apps in this window inserts them into the project. The DAVE™ Apps that are being used in the current project are shown in the lower left "App Dependency TreeView" table.

This example uses a total of seven DAVE™ Apps. Only the UART (UART001) and Segger GUI (GUISL001) DAVE™ Apps were manually inserted into the project. The OLED low level driver (GUILC001), SPI (SPI001), I/O pin (IO002), reset (RESET001) and clock (CLK001) DAVE™ Apps were automatically inserted into the project since they are "required" by UART and Segger GUI DAVE™ Apps.

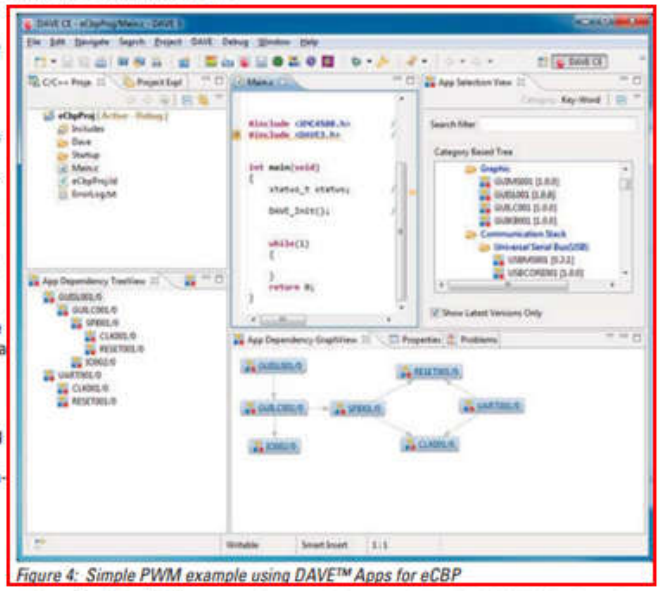

Figure 4: Simple PWM example using DAVE™ Apps for eCBP

As you might expect, the clock DAVE™ App is used to setup the clock system. The reset DAVE™ App is used

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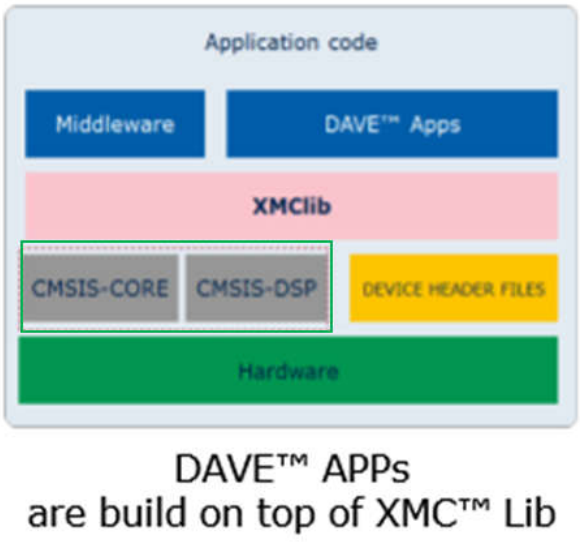
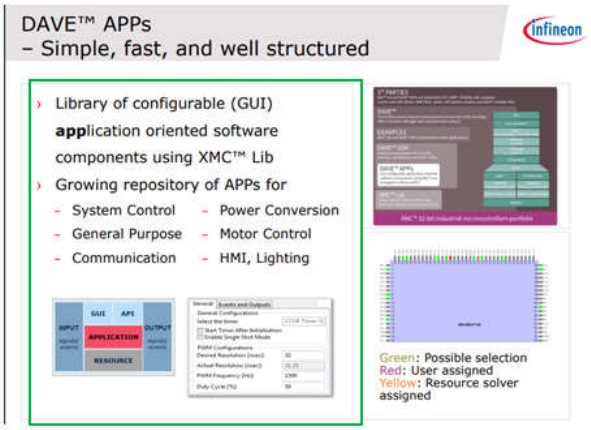
16. The Product provides one or more generic application handler programs. DAVE provides a Hardware Abstraction Layer (HAL) containing CMSIS and other programs, functions and data structures which are common and uniform across all supported hardware (such as XMC1xxx and XMC4xxx microcontrollers based on ARM Cortex-M processors) and peripheral drivers. The generic programs comprise computer program code for performing generic application functions common to multiple types of hardware modules used in a communication environment (e.g., the generic code provides common and generic functions to multiple hardware modules, as previously identified in paragraph 15). Certain elements of this limitation are illustrated in the screenshots below and in the screenshots referenced in connection with other elements herein.





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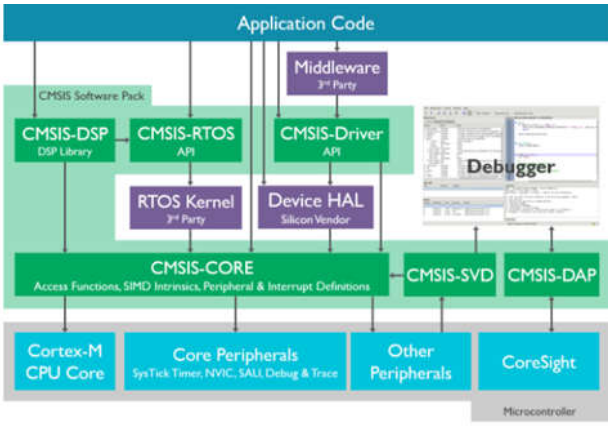
Starting from CMSIS-CORE, a vendor-independent hardware abstraction layer for Cortex-M processors, CMSIS has since expanded into areas such as software component management and reference debugger interfaces. Creation of software is a major cost factor in the embedded industry. Standardizing the software interfaces across all Cortex-M silicon vendor products, especially when creating new projects or migrating existing software to a new device, means significant cost reductions.

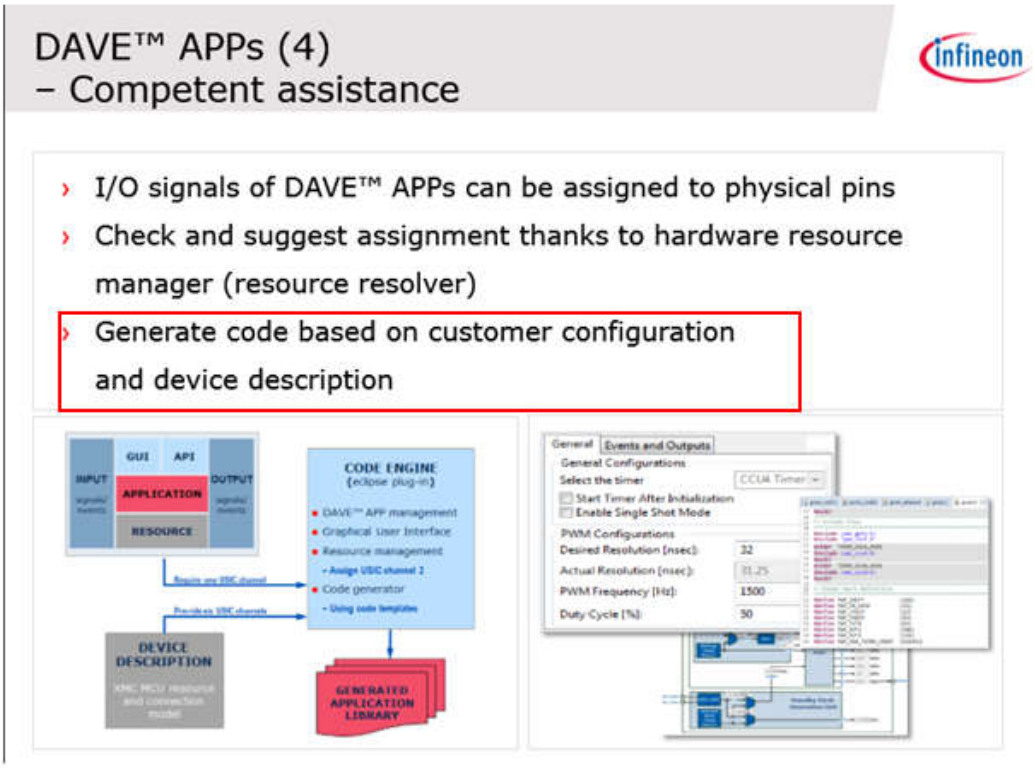
CMSIS is defined in close cooperation with various silicon and software vendors and provides a common approach to interface to peripherals, real-time operating systems, and middleware components. It simplifies software reuse, reducing the learning curve for new microcontroller developers and cutting the time-to market for devices.



Source: https://developer.arm.com/embedded/cmsis

17. The Product includes generating specific application handler code to associate the generic functions with the specific functions at a device driver for at least one of the types of hardware modules. For example, in addition to the generic drivers and HAL, DAVE also includes specific application handler code that is specific to the application (such as motor control, power conversion, communication, general purpose, HMI, etc.) and specific to

particular hardware (such as particular boards and components). Certain elements of this limitation are illustrated in the screenshots below and in the screenshots referenced in connection with other elements herein.



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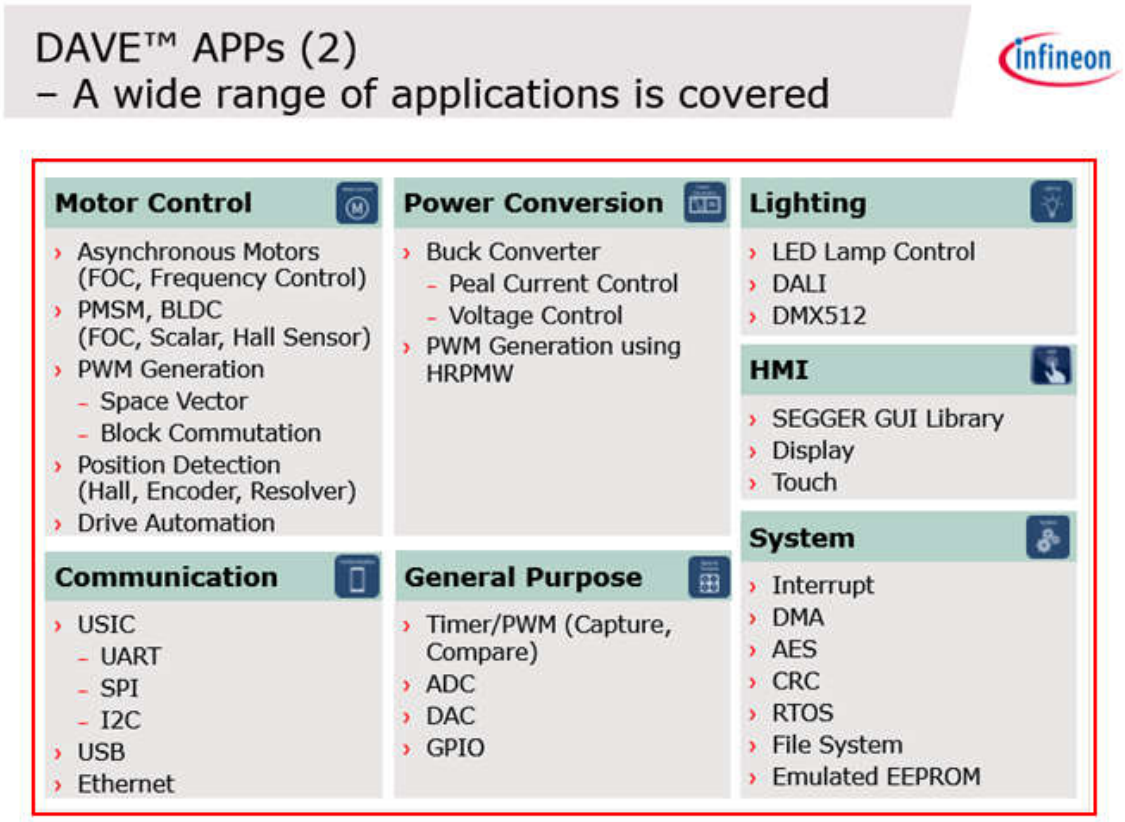

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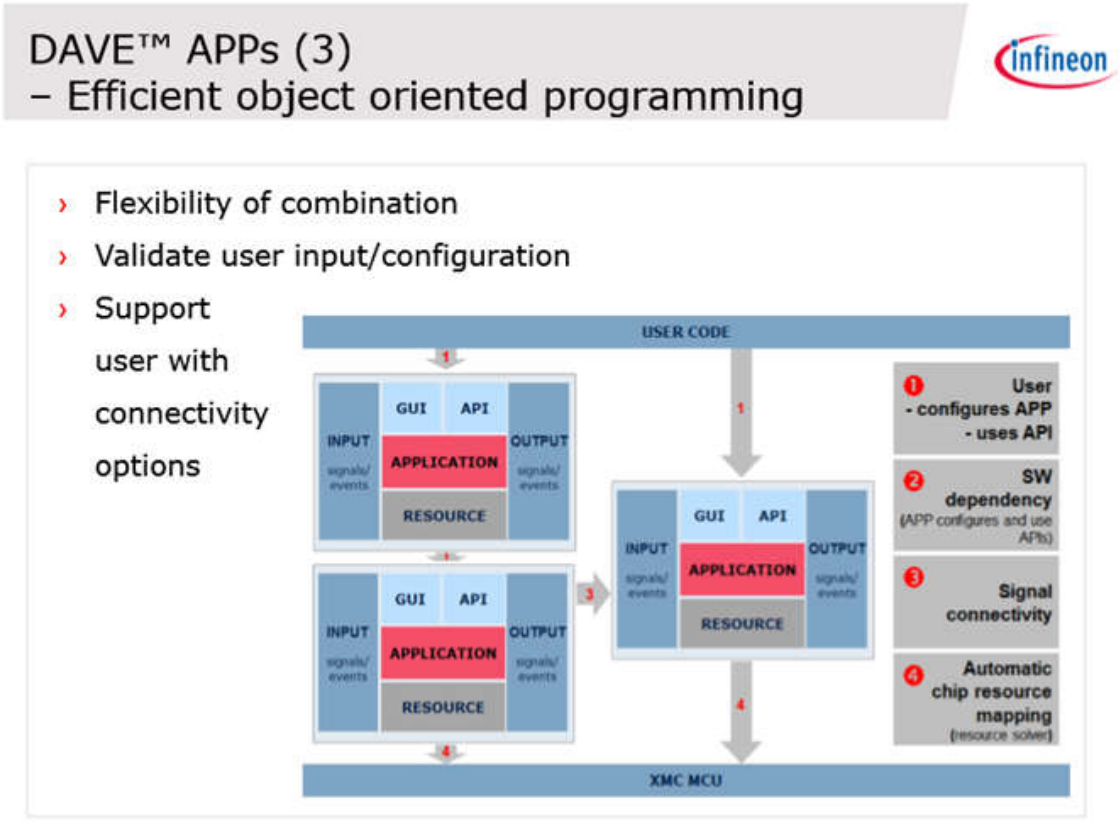

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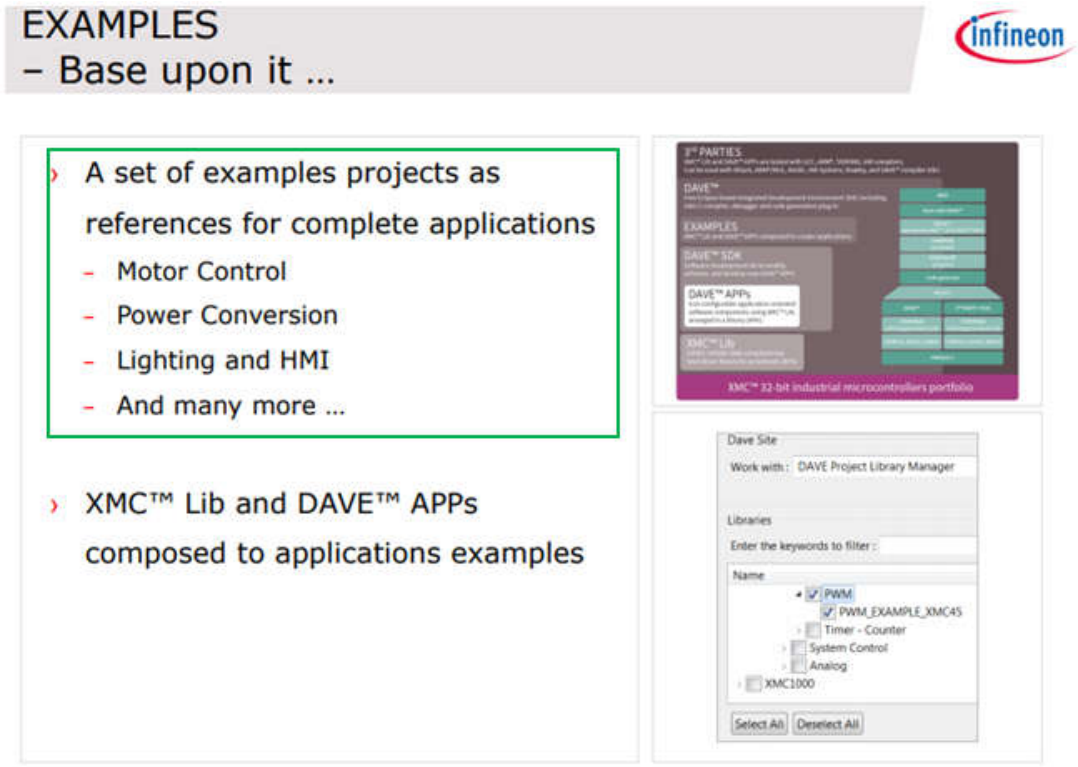
18. The Product generates specific application handler code and defines a specific element in the specific code to be handled by one of the generic application functions for that hardware module. For example, DAVE generates system-specific application handler code by defining a specific element such as functions and data structures corresponding to specific hardware components (such as motor control, power conversion, communication, general purpose, HMI, etc.) that extend or otherwise connect the system-specific application handler code to the functions and data structures defined and made available by the HAL. When specific functions are written for handling defined specific elements (such as UART, I2C, SPI, USB etc.), the specific functions must be registered. DAVE accordingly contains data structures that register and embed the required functions. Certain elements of this limitation are illustrated in the screenshots below and in the screenshots referenced in connection with other elements

herein.



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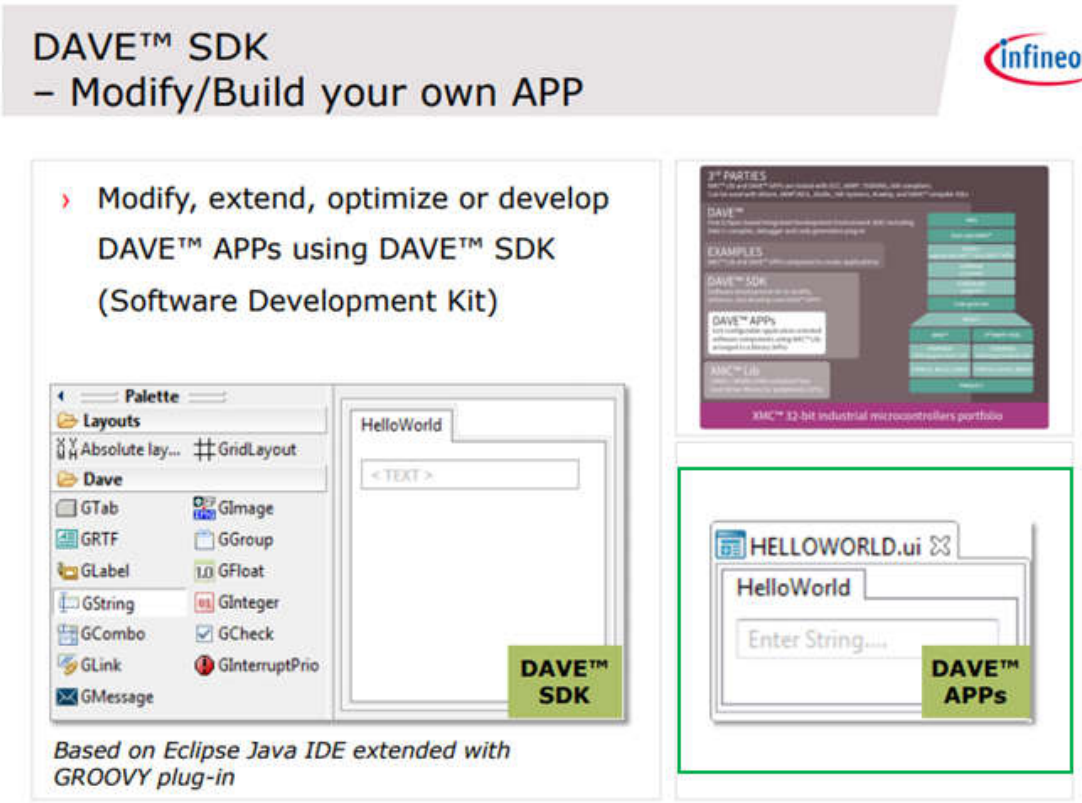

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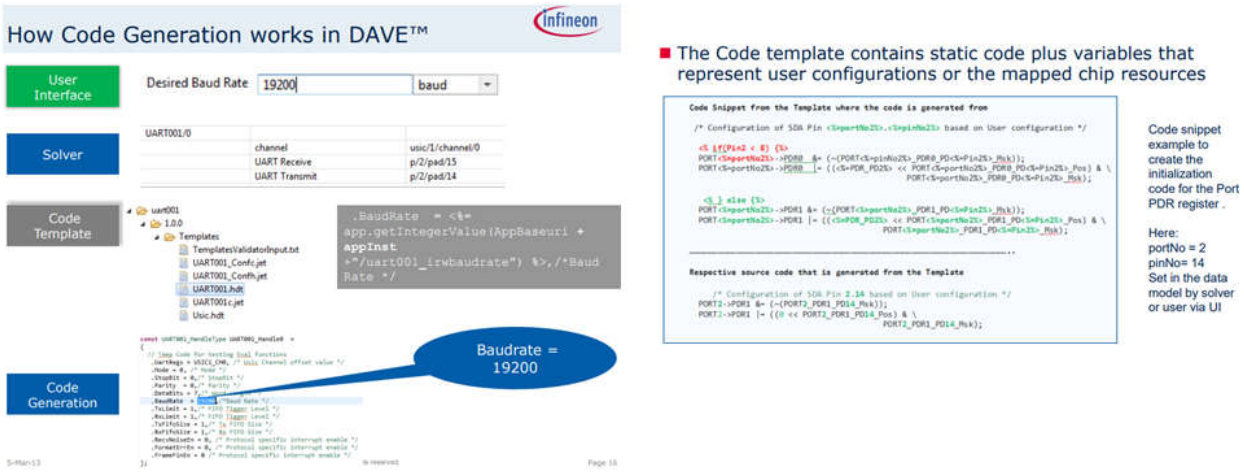

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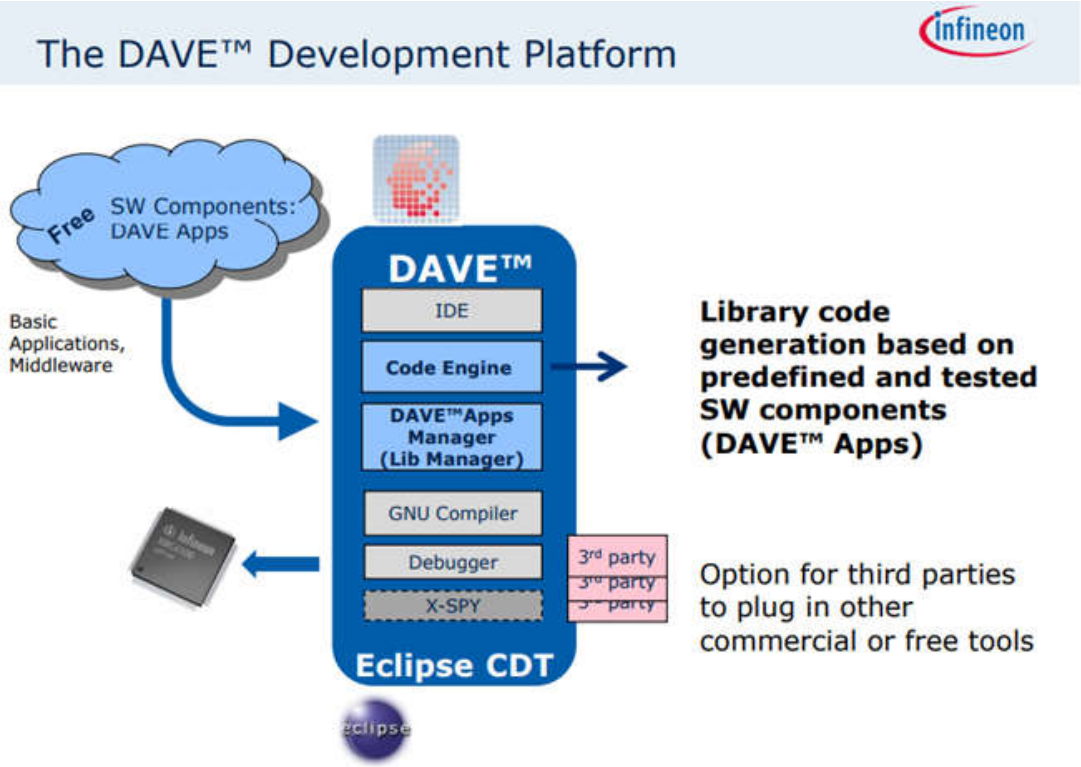
19. When a specific application is needed for a particular hardware, the generic functions and the specific functions are compiled together to yield a machine readable code.

Infineon and/or its customers compile the generic functions and the specific functions using DAVE and/or any other compiling IDE supported by Infineon. Certain elements of this limitation are illustrated in the screenshots below and in the screenshots referenced in connection with other elements herein.



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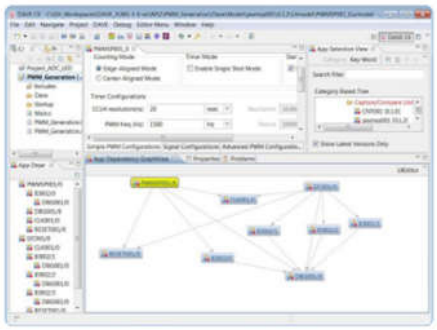

- DAVE™ includes:
  - Eclipse CDT based IDE with improved project management
  - GNU C-Compiler tools
  - Debugger incl. Flash loader
  - Code generation plug in with graphical user interfaces
  - A resource solvers provides automatic or constrained assignment of chip resources to the DAVE™ Apps
  - Library manger to download and manage the DAVE™ Apps
  - Data visualization
  - Can be used with 3 rd party tools and SW
  - DAVE™ version 3 supports the XMC1000 and XMC4000 family

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20. Defendant's actions complained of herein will continue unless Defendant is enjoined by this court.

21. Defendant's actions complained of herein are causing irreparable harm and monetary damage to Plaintiff and will continue to do so unless and until Defendant is enjoined and restrained by this Court.

22. Plaintiff is in compliance with 35 U.S.C. § 287.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff asks the Court to:

(a) Enter judgment for Plaintiff on this Complaint on all causes of action asserted herein;

(b) Enter an Order enjoining Defendant, its agents, officers, servants, employees, attorneys, and all persons in active concert or participation with Defendant who receive notice of the order from further infringement of United States Patent No. 7,069,546 (or, in the alternative, awarding Plaintiff a running royalty from the time of judgment going forward);

(c) Award Plaintiff damages resulting from Defendant's infringement in accordance with 35 U.S.C. § 284;

(d) Award Plaintiff pre-judgment and post-judgment interest and costs; and

(e) Award Plaintiff such further relief to which the Court finds Plaintiff entitled under law or equity.

Dated: December 11, 2017

Respectfully submitted,

/s/ Jay Johnson

JAY JOHNSON
State Bar No. 24067322
D. BRADLEY KIZZIA
State Bar No. 11547550
KIZZIA JOHNSON, PLLC
1910 Pacific Ave., Suite 13000
Dallas, Texas 75201
(214) 451-0164
Fax: (214) 451-0165
jay@kjpllc.com
bkizzia@kjpllc.com

ATTORNEYS FOR PLAINTIFF

EXHIBIT A